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C. A.

American Ichthyology
or natural history
of the fishes of North America
(5 pl. color)

New-Harmony, indiana, 1827.

AMERICAN ICHTHYOLOGY.

OR,

NATURAL HISTORY

OF THE

FISHES OF NORTH AMERICA:

WITH

COLOURED FIGURES

FROM

DRAWINGS EXECUTED FROM NATURE.

BY

C. A. LESUEUR.

Member of many learned Societies.

NEW-HARMONY, INDIANA.

1827.

ORDER. 1.

Branchiæ fixed.

Family 1. (CYCLOSTOMUS, Dumeril. Sucker.)

Genus PETROMYZON. Linn.

Characters.

Seven *branchial apertures* on each side of the neck.
One *spiracle* on the top of the head.
Mouth discoidal, furnished with papillæ on its circumference, interiorly toothed.

SPECIES.

1. P. *Americanus*. Back slightly carinated; *dorsal* fins separated, the first low, and about half the length of the second, which is high on the anterior part, and gradually decreases to the tail.

Description.

Second dorsal attached to the *caudal* by the common integument, which slopes suddenly where it joins the latter: *branchial* apertures with a little cartilaginous point behind: *body* subequal as far as the



PETROMYSON *americanus.*

C. A. Le Sueur

second dorsal, thence gradually decreasing: *head*, when the mouth is contracted, a little sloping, presenting a cylindric, obtuse snout: *eyes* moderate and round under the skin; *iris* yellowish-white, with a dark brown circle; *pupil* black: *nostrils* projecting in a small tube: *teeth* compound and simple; those in the throat five, pretty strong, inferior ones cordate denticulate, lateral ones curved, denticulate,the two superior teeth simple; these teeth are surrounded by teeth of other forms; inferior tooth semicircular, with seven sharp points, the superior one has two points; on each side are four two-pointed teeth, placed obliquely and succeeded by five or six simple ones which describe curved lines, and diminish in size towards the rim of the mouth; above the upper double tooth and two lateral teeth, is a large simple one; behind the lower tooth are nine perpendicular ranges of teeth, regularly disposed: *sides* varied, red, brown, yellow and blue: *back* black on the keel and base of the dorsal fins—this colour is the basis or origin of the lateral marbling which is composed of small, oblong, irregular and transverse spots, grouped together: *caudal* fin long above, short below, terminated by three angles, that of the middle indicates the extremity of the tail—lower part of the caudal fin short, perpendicular and composed of small rays, four or five lines lông, and placed at the extremity of the expansion of skin, which connects it with the tail. Length thirty inches.

In several lakes and rivers of North America is a

fish of this genus, to which the common appellation of Lamprey is given by the inhabitants, but I cannot determine whether the one described is the same or not. Its general resemblance to serpents occasions its being destroyed as soon as taken, and therefore it is difficult to arrive at a knowledge of the species. Of the one described, I obtained several specimens at Philadelphia, in the spring of 1816.

In the Transactions of the Literary and Philosophical Society of Newyork, Dr. Mitchill has given a short description of a Petromyzon, which he considers to be the same as the *P. marinus* of Europe. My species I regard as new.

The European Lamprey is an inhabitant of the ocean; ascends rivers early in the spring; and, after producing its young, returns to the sea. It is viviparous. History informs us, that the death of Henry the First of England was occasioned by a too luxurious indulgence in a dish of Lampries.

2. *P. nigricans.* Dorsal fins white, elevated, the second higher than the first and angular on its anterior part; head, back and caudal fin blackish-blue; abdomen bluish-white; eyes very large, pupil black.

Nostrils united in a tube, placed a little before the eyes; between the latter is a small whitish spot; *branchial* openings very oblique, the first smallest, near the eye: *teeth* placed as in the preceding species; three in the throat, the lateral ones in the form of a comma, middle ones obcordate: *first dorsal* fin rounded behind, and elevated on the anterior part; *second dorsal* elevated before, thence gradually descending and connected to the caudal by the common skin: *caudal* triangular at tip: *sides* with small, obsolete bands. Length of the specimen six inches.

This species, compared with a figure of the P. *niger* of Europe, which I made at Rouen, is shorter, thicker before, and much more compressed at the first dorsal fin, and the head is broader at the eyes.

This fish appears in the spring with the shad and herrings, and is only occasionly caught.

The P. *niger* is very common in the markets of Rouen, and is highly prized as food.



C. A. Lesueur D. & inci.

PETROMYZON nigricans.

P. *Lamottenii*. Body subcylindric, a little dilated in the middle, attenuated towards the tail; rounded and obtuse anteriorly.

Disk circular, margined with many ranges of small, more or less foliaceous appendices; inner surface destitute of teeth in some specimens and having only radiated lines; in others the small teeth are hardly sensible, but are sufficient to indicate the generic affinity; base of the disk with two strong teeth, one above and one below; the former arquated, furnished in some specimens, with two tubercles, obtuse, conical; in others the tubercles are truncated and cutting; inferior tooth arquated, larger than the superior one, mutic or crenulated according to the age of the individual or to the state of the subcorneous substance which covers it. In the male the small, lateral teeth are bi-or trituberculate.

Tongue bilobated: *aperture of the nostril* frontal, in advance of the eyes, in the centre of a small disk.

Dorsal fins arquated; in the male second dorsal more elevated, furnished with small rays, united with the caudal and in both sexes leaving a small emargination at the junction with the first dorsal; *anal* less elevated, originating at the anus: *vulva* exterior; *penis* distinct and prominent.

Branchiæ enclosed in a sack, open at its extremities; each with 30 lamellæ, which are attached by the middles to the inner opening, whilst the remaining part flotes towards the exterior opening: *back* yellow, marbled with olive; sides and belly white.

Length from 5 to 5 and a half inches.

This species is allied to the present genus by the form of the body and by the seven lateral branchial apertures, but it differs by its long anal fin and by the junction of the two dorsals which are separate in other species. It approaches the P. *argenteus*, Bl XII. 415.

It inhabits briskly running waters, attaching itself to rocks which receive cascades; whence it immediately recedes when approached. As its vision is very good, it is necessary to be quick in attempting to sieze it, in order to secure it. Of seven individuals which we obtained, but one was a male; the others contained numerous eggs. The water over the rocks on which we observed them, was from 2 inches to 7 feet deep; in a cave formed by the rapid current and secluded from the rays of the sun. We designated this cave by the name of the proprietor Mr. Wilkinson, it consists of a superposition of sand stone, on scienite and diabase, and will receive a more particular description in an account of an excursion made in April 1820 by Dr. Troost and myself to the Lamotte mine in Missouri. My specific name is that of Lamotte, one of the companions of Renault, who discovered this mine in 1720 when the French possessed that country.

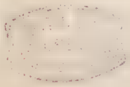
The figure represents the natural size. The Disk is that of an individual destitute of the small teeth.

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C.A.Lesueur Del. C.Tiebout Sculp.

PETROMYSON Lamottenii.



Genus Ammocœtes. Dumer.

Characters.

Branchial apertures seven each side of the neck.
Lips not united into a disk, destitute of teeth.
Eyes not apparent.

1. A. *bicolor*. Dorsal fins, separated, the second united to the caudal which is rounded; back and sides reddish; abdomen white, the colours separated by an undulated line.

Body before subcylindric, behind compressed, and tapering to the tail: *nape* elevated: *head* sloping prolonged into a *snout* with a lip, which has two short, rounded lobes; these lobes, when the mouth is closed embrace and conceal the lower lip, which is very short: *nostrils* small, in the centre of a white, oval, pellucid disk, easily moveable: *upper lip* granulated within: opening of the throat with small, ramified papillæ: *branchial* apertures in a longitudinal depression, oblique, a little curved; first aperture above the angle of the mouth: *head* with a lateral, whitish spot, which seems to indicate the position of eyes, that this species is deficient of, in common with the P. *ruber* of Europe.

The annular or ribbed appearance of the sides of this fish, is owing to the muscles, which are endued with great strength, in order to enable it to burrow in the muddy sands of rivers, where it penetrates in

a serpentine manner, by means of its snout, the large lip of which performs the function of a terrier. The European species is generally taken when the small rivers are cleansed of the superabundant sand and mud which obstruct their channels. This last is much sought after for food; but the American species is commonly rejected, as is almost every animal that either has a real, or fancied, resemblance to a snake. This fish is used for bait.

The above described species was taken in Connecticut river. I am indebted for it to Dr. Hunt of Northampton, Connecticut.



AMMOCŒTES bicolor.

C.A. Lesueur Del. inv.

ORDER 2.

Branchiæ free.—Cuvier.

Genus ACCIPENSER.

Characters

Mouth beneath, retractile, toothless.

Snout bearded beneath.

Body elongated, with several ranges of bony tubercles. LACEPÈDE.

1. A. *rubicundus. Head* covered with bony plates which are rough, radiated, and irregularly configurated; above flat, declivous, and terminated in a subrounded *snout*, which is furnished with four transversely flat cirri, nearer the end of the mouth: *eyes*, round; *pupil* vertical: *back* yellowish-red: *sides* olivaceous-red: *body* much elevated at the cervical tubercle: *dorsal* tubercles nine, the two last acute; *side* tubercles thirty-five, subequally placed, lozenge-shaped: *plates* none on the abdomen; several rudiments behind the dorsal fin: *skin* with small groups of spines, rendering it harsh to the touch when dry, but when recent, the spines are less sensible on account of the mucous which covers them: *operculum* with a large radiated shield: behind the eyes small plates extending along the border of the snout; be-

low the eyes a semicircle of small tubercles: *nasal* apertures, two on each side, before the eyes, posterior one perpendicular, anterior one is rounded, and near the summit of the former: *mouth* small, lips thick: *pectoral* fins very low, horizontal, fifty-rayed: *ventral* near the anus, triangular, twenty-eight rayed: *anal* longer than broad, twenty-two rayed: *dorsal* triangular, its centre perpendicular to the anterior base of the anal, forty-rayed: *caudal* lunate, its upper lobe strait, acute; lower lobe large, triangular: *tail* covered with small, lozenge-shaped, osseus tubercles: all the fin-rays hirsute. Length of the specimen four feet; head six inches, between the eyes three inches, from the eyes to the tip of the snout three inches.

This fish is not sought after for the table. When taken it is occasionally salted as a substitute for more esteemed food. The useful qualities of sturgeons, are not yet fully appreciated in America, particularly in those parts which have experienced the benefits of agriculture and commerce, or where more valued fishes are abundant.

This species inhabits Lakes Erie and Ontario. Mr. Thomas Nuttall, Botanist, informed me that this species also inhabits Lakes Huron, and Michigan; that it is eaten by the Indians, who take it by means of a harpoon or dart, to the end of which is attached a long line, in order to enable them to play the animal until he is exhausted. Mr. Nuttall asserts, from his own experience, that this sturgeon is good, palateable food.



C. A. Le Sueur. Del. & Sculp.

ACIPENSER rubicundus.